

Claims

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1. A flavonoid ester with a  $\omega$ -substituted C6 to C22 fatty acid, wherein in a preferred embodiment the  $\omega$ -substituted C6 to C22 fatty acid is a saturated or unsaturated, linear or branched aliphatic C6 to C22 - carboxylic acid having one or more polar groups.
2. The flavonoid ester according to claim 1, **characterised in** that the flavonoid is an aglycone or the glycosylated form of a polyphenol chosen from the group consisting of a flavone, a flavonol, a flavanone, a flavanol, a flavanolol, an isoflavone, an anthocyanin, a proanthocyanidin, a chalcone, an aurone and a hydroxycoumarin.
3. The flavonoid ester according to claim 1 or 2, **characterised in** that the polar group is on the terminal carbon atom of the C6 to C22 – carboxylic acid.
4. The flavonoid esters according to any of claims 1 to 3, **characterised in** that the polar group of the  $\omega$ -substituted C6 to C22 fatty acid is a derivative of a carboxylic acid chosen from the group consisting of a carboxylic acid COOH; an amide  $\text{CONR}'_2$  or  $\text{CONR}'_3^+\text{S}^-$  wherein  $\text{R}'$  is a hydrogen atom, a saturated or unsaturated, linear or branched alkyl C1-C6 radical, or an aryl, aralkyl or aralkylene radical and  $\text{S}^-$  is a counter ion; a COHal where in Hal is a halogen atom; and a COSH (preferably the  $\omega$ -substituted C6 to C22 fatty acid is a dicarboxylic acid, preferably this dicarboxylic acid is chosen from the group consisting of octanedioic acid, azelaic acid, decandioic acid, dodecandioic acid, hexadecandioic acid and octadecandioic acid).
5. The flavonoid ester according to any of claims 1 to 3, **characterised in** that the  $\omega$ -substituted C6 to C22 fatty acid is a dicarboxylic acid linked to a flavonoid by an ester bond on one of its carboxylic groups  $\text{HOOC-X-C(=O)-O-flavonoid}$ , wherein X is a saturated or unsaturated, linear or branched alkyl radical ( $\text{C}_4 - \text{C}_{20}$ ); preferably the  $\omega$ -substituted C6 to C22 fatty acid is 11-mercaptoundecanoic acid or thioctic acid.
6. The flavonoid ester according to any of claims 1 to 3, **characterised in** that the polar group of the  $\omega$ -substituted C6 to C22 fatty acid is a thiol or an alkylthioalkyl group.
7. The flavonoid ester according to any of claims 1 to 3, **characterised in** that the  $\omega$ -substituted C6 to C22 fatty acid has two adjacent polar groups which are diol, dithiol, 1,2-dithiane, 1,3-dithiane or epoxide.

8. A nutritional or cosmetic or pharmaceutical composition containing a flavonoid ester according to any of claims 1 to 7.
9. A nutritional or cosmetic or pharmaceutical composition comprising liposomes or microcapsules containing a flavonoid ester according to any of claims 1 to 7.
10. A nutritional or cosmetic or pharmaceutical composition according to claim 8 or 9, **characterised in** that it contains 0.0001 to 10 wt % of a flavonoid ester.
11. The use of a flavonoid ester according to any of claims 1 to 7  
as a cosmetic agent to protect skin and scalp against damages caused by UV radiation  
or as a cosmetic agent to protect skin and scalp against mitochondrial or nuclear DNA damages caused by UV radiation  
or as anti-inflammatory and/or soothing and relieving agent  
or as a cosmetic agent against the ageing of skin and scalp  
or in sun protection compositions .
12. The use of a flavonoid esters according to any of claims 1 to 7  
for the production of a preparation for stimulating the metabolism and the immune defense of the human skin, more particularly for defense against oxidative stress  
or for the production of a preparation against environmental stress or pollutants  
or the production of a dermatological anti-inflammatory care preparation  
or for the production of a draining, veinotonic or slimming preparation.
13. The use according to any of claims 12 to 13, **characterised in** that the flavonoid ester is used in quantities of 0,0001 to 10 wt % based on the final composition.
14. The use according to any of claims 12 to 13, **characterised in** that the flavonoid ester is incorporated in liposomes or microcapsules.